

**Notice of Allowability**

Application No.

10/764,378

Examiner

Kathryn Odland

Applicant(s)

TOPP, DANIEL P.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 24 January 2004.
2. ☒ The allowed claim(s) is/are 12-16.
3. ☒ The drawings filed on 26 January 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mark Garzia on November 18, 2004.

The application has been amended as follows:

Claims 1-11 and 17-18 are cancelled.

Claim 12 is amended (that deleted is in brackets and that added is underlined) as follows:

12. A gas heater comprised of:

a cylindrical housing having an air-intake end and an air-exhaust end;

a cylindrical liner attached to the inner surface of said cylindrical housing at spaced-apart intervals and positioned generally concentrically within said cylindrical housing and also having an air-intake end and an air-exhaust end;

means positioned proximate said air-intake end for drawing air in through said air-intake end, through said liner and out the air exhaust end;

a combustion system positioned within said liner at the proximate midpoint of said housing, for burning gas, thereby heating the air as it travels through said liner, the combustion system comprising:

a circularly-shaped burner tube positioned concentrically within said liner and having a plurality of gas exit holes on a side facing the air-exhaust end;

a pair of truncated conical flanges attached to said burner tube [proximate] adjacent to and on [either] each side of the gas exit holes, said flanges extending radially outward from said burner tube, such that the distance between the flanges increases as the distance from the burner tube increases, and each flange having its own respective pattern of orifice ports;

means for inletting gas into the burner tube;

control means that communicates with said inletting means for variably controlling the amount of gas that enters said burner tube between the range of no gas entry to a pre-determined maximum value; and

ignition means for igniting gas that initially exits said burner tube, said ignition means electrically connected to said control means and is activated when said control means allows gas to enter after being in the no gas entry range.

The specification is amended:

At page 8, lines 17-22, bridging over to page 9, lines 1-2:

Gas enters the combustion system 50 through tube 70 and eventually is relatively evenly distributed throughout ring-shaped burner tube 72. As gas leaves via gas exit holes 74 it is ignited by igniter 90 [76]. After the gas is ignited, the control circuit ensures that a stream of gas exits gas holes 74, thereby ensuring that a flame is continuously lit at the combustion system 50.

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A flame [The] sensor 37 can have dual functions, initially it can act as the ignition source and light or ignite the air/gas mixture to initiate proper combustion, and secondly it provides flame rectification thus signaling to the control circuit that there is proper combustion to the control circuit to maintain the gas valves open 54, 56 and discontinue the ignition source.

2. The following changes to the drawings have been approved by the examiner and agreed upon by applicant: change element number 76 to 90 (Figure 7). In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes.

3. The following is an examiner's statement of reasons for allowance: the prior art of record does not show, singly or in combination, the combination of elements recited in claim 12 including a gas heater with the elements as recited in claim 12 where the combustion system has a circularly shaped burner tube concentrically within a gas heater liner and the gas exit holes face the air-exhaust. A pair of truncated conical flanges is attached to each side of the burner tube, respectively, such that the flanges extend radially outward and the distance between the flanges increases as the distance from the burner tube increases.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kathryn Odland whose telephone number is (571) 272-4801. The examiner can normally be reached on M-F (7:30-5:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry A Bennett can be reached on (571) 272-4791. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KO



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